p. 9 10/812586

STIC search

We claim:

1. A process for recovery of sodium thiocyanate from industrial process solution containing undesirable components such as organic or inorganic compounds, color imparting ions and bivalent salts by membrane based nanofiltration technique said process comprising the steps of passing the industrial process solution as a feed solution through a nanofiltration member with simultaneous application of positive pressure to provide a pass solution and a permeate solution, wherein the permeate solution is substantially devoid of the undesirable components and evaporating the permeate solution to obtain sodium thiocyanate.

2. A process as claimed in claim 1 wherein the feed solution contains undesired components of bivalent, color imparting ions and other organic and inorganic compounds.

3. A process as claimed in claim 1 wherein the feed solution contains sodium thiocyanate in a concentration in excess of 100gpl.

4. A process as claimed in claim 1 wherein the feed solution contains sodium thiocyanate in a concentration between 110 gpl and 120 gpl.

5. A process as claimed in claim 1 wherein organic components present in the feed solution is selected from the group consisting of β-Sulfo propionic acid and β-Sulfo propionitrile.

6. A process as claimed in claim 1 wherein the desired component in permeate is sodium thiocyanate.

7. A process as claimed in claim 1, wherein the process may comprise of multiple stages wherein the pass solution from a previous stage is diluted using distilled water and used as feed solution for a next stage.

8. A process as claimed in claim 1 and 7, wherein the feed solution or the diluted pass solution is passed through one or more nanofiltration membrane modules connected in series so as to produce second and/or subsequent pass solutions, consecutively, which are then finally disposed.

[redacted]

9. A process as claimed in claim 1, wherein the nanofiltration membrane used is selected from the group consisting of cellulose triacetate membrane, polyamide membrane and hydrophilised polyamide membrane.

10. A process as claimed in claim 1, wherein the nanofiltration membrane has active membrane area of about $1m^2$.

11. A process as claimed in claim 1, wherein the pressure applied to the feed solution at the time of passing the same through the nanofiltration membrane is equal to or greater than osmotic pressure difference between the feed/pass solution on one side and the permeate solution of the other side of the membrane.

12. A process as claimed in claim 1, wherein the process is operated under flux whose value is in the range of 25 to 40 Lm^2hr^{-1}.

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=> file reg
FILE 'REGISTRY' ENTERED AT 12:17:25 ON 18 JUL 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> display history full l1-

     FILE 'REGISTRY' ENTERED AT 11:08:23 ON 18 JUL 2006
                E SODIUM THIOCYANATE/CN
L1            1 SEA "SODIUM THIOCYANATE"/CN
                E CELLULOSE TRIACETATE/CN
L2            1 SEA "CELLULOSE TRIACETATE"/CN OR "CELLULOSE TRIACETATE
                POLYMER"/CN
                E BETA-SULFOPROPIONIC ACID/CN
                E 2-SULFOPROPIONIC ACID/CN
L3            1 SEA "2-SULFOPROPIONIC ACID"/CN
                E 2-SULFOPROPIONITRILE/CN
                E B-SULFOPROPIONITRILE/CN
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                REPROCESS?)/BI,AB
L5            3 SEA (RE(W)(COVER? OR CLAMAT? OR CLAIM? OR GENERAT? OR
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                CYCL? OR PROCESS?))/BI,AB
L6         9537 SEA (PURIF? OR SEPARAT? OR SEP# OR ISOLAT? OR FILT? OR
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L7            0 SEA NANOFILT?

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L8          175 SEA (L4 OR L5 OR L6 OR L7)(2A)(L1 OR (SODIUM# OR
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L9       765531 SEA MEMBRAN?
L10        4031 SEA NANOFILT? OR NANO(2A)FILT?
L11         146 SEA L3 OR ?SULFOPROPIONIC? OR ?SULFOPROPIONITRIL?
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L12      48008 SEA L2 OR CELLULOSE#(2A)(ACETATE# OR TRIACETATE#)
L13     168501 SEA POLYAMIDE# OR POLY(A)AMIDE#
L14         12 SEA L8 AND L9
L15          3 SEA L8 AND L10
L16          1 SEA L8 AND L11
L17          0 SEA L8 AND L12
L18          0 SEA L8 AND L13
               SEL L16 1 RN

     FILE 'REGISTRY' ENTERED AT 11:55:32 ON 18 JUL 2006
L19          6 SEA (107-67-5/BI OR 44826-45-1/BI OR 540-72-7/BI OR
               7439-89-6/BI OR 7440-70-2/BI OR 7757-82-6/BI)
L20          4 SEA L19 AND S/ELS
L21          3 SEA L20 NOT L1
L22          2 SEA L21 AND C/ELS

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L23         49 SEA L22
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L26          1 SEA L23 AND L25
L27        338 SEA L25 AND L9
L28          3 SEA L25 AND L10
L29          1 SEA L25 AND L11
L30         51 SEA L25 AND L12
L31         76 SEA L25 AND L13
L32          7 SEA L27 AND L30
L33          6 SEA L27 AND L31
L34          6 SEA L30 AND L31
L35         31 SEA L14 OR L15 OR L16 OR L24 OR L26 OR L28 OR L29 OR L32
               OR L33 OR L34
L36         20 SEA L15 OR L16 OR L24 OR L26 OR L28 OR L29 OR L32 OR L33
               OR L34
L37         11 SEA L14 NOT L36

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L38        635 SEA L1 OR (SODIUM# OR NA)(W)THIOCYANATE# OR NASCN
L39       1181 SEA NANOFILT? OR NANO(2A)FILT?
L40          1 SEA L38 AND L39

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L41         96 SEA L1 OR (SODIUM# OR NA)(W)THIOCYANATE# OR NASCN
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L42          116 SEA NANOFILT? OR NANO(2A)FILT?
L43            0 SEA L41 AND L42
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MOST RECENT DERWENT UPDATE:      200645         &lt;200645/DW&gt;
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE
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L40  ANSWER 1 OF 1  WPIX  COPYRIGHT 2006 THE THOMSON CORP on STN
AN   2005-722574 [74]   WPIX
DNC  C2005-219904
TI   Recovery of sodium thiocyanate from industrial
     process solution comprises passing industrial process solution as
     feed solution through nanofiltration member with
     application of positive pressure.
DC   A88 D15 E34 J01
IN   BIDURU, S; DURAISWAMY, S; GORUGANTU, S M; MACHIRAJU, R; SRIDHAR, S;
     SUNDERGOPAL, S
PA   (COUL) COUNCIL SCI & IND RES SOUTH AFRICA; (BIDU-I) BIDURU S;
     (DURA-I) DURAISWAMY S; (GORU-I) GORUGANTU S M; (MACH-I) MACHIRAJU R;
     (SRID-I) SRIDHAR S
CYC  109
PI   US 2005214192    A1 20050929 (200574)*      12     C01B021-086
     EP 1586562       A1 20051019 (200574)# EN          C07C331-04
         R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT
            LU LV MC MK NL PL PT RO SE SI SK TR
     WO 2005092793    A1 20051006 (200574)  EN          C01C003-20
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            IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW
            MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY
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TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
ADT US 2005214192 A1 US 2004-812586 20040329; EP 1586562 A1 EP 2004-251891 20040330; WO 2005092793 A1 WO 2004-IB3504 20041026
PRAI US 2004-812586 20040329; EP 2004-251891 20040330
IC ICM C01B021-086; C01C003-20; C07C331-04
ICS B01D061-02
AB US2005214192 A UPAB: 20051117
NOVELTY - **Sodium thiocyanate** is recovered from industrial process solution by passing industrial process solution as feed solution through a **nanofiltration** member with application of positive pressure to provide pass solution and permeate solution, and evaporating the permeate solution to obtain **sodium thiocyanate.** The permeate solution is devoid of undesirable components.

USE - Used in the recovery of **sodium thiocyanate** from industrial process solution.

ADVANTAGE - The invention involves intermittent dilution of the feed with deionized water to facilitate maximum possible recovery of **sodium thiocyanate** in permeate with maximum rejection of impurities. It reduces color of the permeate solution. It is able to identify a chemically resistant membrane, which yields maximum recovery of **sodium thiocyanate** at optimum flux with highest degree of impurity and color rejection.

DESCRIPTION OF DRAWING(S) - The figure is a diagrammatic flow sheet of a single stage **nanofiltration** membrane system.

Tank 1
Pump 4
Module 6
Recycle conduit 14
Feed conduit 15
Permeate stream conduit 16
Dwg.1/3

TECH US 2005214192 A1UPTX: 20051117
TECHNOLOGY FOCUS - CHEMICAL ENGINEERING - Preferred Properties: The feed solution contains undesired components of bivalent, color imparting ions, and other organic and inorganic compounds. It contains 100, preferably 110-120 g/l **sodium thiocyanate.** Preferred Compositions: Organic components present in the feed solution are consisting of beta-Sulfo propionic acid and beta-Sulfo propionitrile. The desired component in permeate is **sodium thiocyanate.** Preferred Methods: The inventive recovery may comprise of multiple stages in which the pass

solution from a previous stage is diluted using distilled water and used as feed solution for a next stage. The feed solution or the diluted pass solution is passed through **nanofiltration** membrane modules connected in series to produce second and/or subsequent pass solutions, consecutively, which are then finally disposed. Preferred Materials: The **nanofiltration** membrane is consisting of cellulose triacetate membrane, polyamide membrane, or hydrophilized polyamide membrane.

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=> file hca
FILE 'HCA' ENTERED AT 12:18:03 ON 18 JUL 2006
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=> d l36 1-20 cbib abs hitstr hitind
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L36 ANSWER 1 OF 20 HCA COPYRIGHT 2006 ACS on STN

143:308653 **Recovery** of **sodium thiocyanate** from industrial process solution using **nanofiltration** technique. Sridhar, Sundergopal; Gorugantu, Suryanarayana Murthy; Duraiswamy, Suhanya; Biduru, Smitha; Machiraju, Ramakrishna (India). U.S. Pat. Appl. Publ. US 2005214192 A1 20050929, 12 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-812586 20040329.

AB The invention relates to a membrane-based **nanofiltration** process for **sepg. sodium thiocyanate** (**NaSCN**) from industrial soln. contg. impurities such as β- **sulfopropionic** acid, β- **sulfopropionitrile**, sodium sulfate and salts of iron and calcium in a single step to obtain a colorless aq. soln. for spinning of acrylic fiber in textile industry.

IT **107-67-5 44826-45-1**
(**recovery** of **sodium thiocyanate** from industrial process soln. using **nanofiltration** technique)

RN 107-67-5 HCA

CN Ethanesulfonic acid, 2-cyano- (6CI, 8CI, 9CI) (CA INDEX NAME)

$NC-CH_2-CH_2-SO_3H$

RN 44826-45-1 HCA
CN Propanoic acid, 3-sulfo- (9CI) (CA INDEX NAME)

$HO_2C-CH_2-CH_2-SO_3H$

IT **540-72-7P, Sodium thiocyanate**
(**recovery** of **sodium thiocyanate**
from industrial process soln. using **nanofiltration**
technique)
RN 540-72-7 HCA
CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

$HS-C\equiv N$

● Na

IC ICM C01B021-086
INCL 423366000
CC 49-9 (Industrial Inorganic Chemicals)
Section cross-reference(s): 40, 47
ST **recovery sodium thiocyanate** industrial
process soln **nanofiltration**
IT Filtration
(**nanofiltration**; **recovery** of **sodium**
thiocyanate from industrial process soln. using
nanofiltration technique)
IT Membrane **filters**
(**recovery** of **sodium thiocyanate**
from industrial process soln. using **nanofiltration**
technique)
IT Acrylic fibers, uses
(**recovery** of **sodium thiocyanate**
from industrial process soln. using **nanofiltration**
technique)
IT **107-67-5** 7439-89-6D, Iron, salts 7440-70-2D, Calcium,

salts 7757-82-6, Sodium sulfate, occurrence **44826-45-1**
(**recovery** of **sodium thiocyanate**
from industrial process soln. using **nanofiltration**
technique)

IT **540-72-7P, Sodium thiocyanate**
(**recovery** of **sodium thiocyanate**
from industrial process soln. using **nanofiltration**
technique)

L36 ANSWER 2 OF 20 HCA COPYRIGHT 2006 ACS on STN

141:12248 Modified Factor IX preparation. Bigler, Douglas E.; Kundu, Sourav K.; Lind, Holger; Schulte, Stefan (USA). U.S. Pat. Appl. Publ. US 2004106779 A1 20040603, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-309877 20021203.

AB The present invention relates to a method of purifn. and stabilization of Factor IX by using anion exchange chromatog. The Factor IX protein from the chromatog. medium is eluted with a low ionic strength soln. comprising about 0.35 M to 0.4 M salt, e.g., sodium chloride or lithium chloride. The method further comprises an affinity chromatog. purifn. step using anti-Factor IX monoclonal antibody, or a viral redn. step. By this method the presence of the protease and plasma hyaluronan binding protease is decreased which minimizes the cleavage of Factor IX and enhances the yield of Factor IX in the purifn. process.

IT **540-72-7, Sodium thiocyanate**
(**purifn.** and stabilization of Factor IX prepn. by anion
exchange chromatog.)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

$HS-C\equiv N$

● Na

IC ICM C07K014-745

INCL 530384000

CC 63-3 (Pharmaceuticals)

IT Filtration
(**nanofiltration**; purifn. and stabilization of Factor IX

prepn. by anion exchange chromatog. and **nanofiltration**)
IT **540-72-7, Sodium thiocyanate**
10043-52-4, Calcium chloride, uses
(**purifn.** and stabilization of Factor IX prepn. by anion exchange chromatog.)

L36 ANSWER 3 OF 20 HCA COPYRIGHT 2006 ACS on STN
138:358223 Effectiveness of alternative treatments for reducing potential viral contaminants from plasma-derived products. Chandra, Sudhish; Groener, A.; Feldman, F. (Aventis Behring, King of Prussia, PA, USA). Thrombosis Research, 105(5), 391-400 (English) 2002. CODEN: THBRAA. ISSN: 0049-3848. Publisher: Elsevier Science Inc..
AB A review. An issue of great importance and continuing concern with regard to all products derived from human plasma is their safety from potential contaminants in the source material from which they are purified. Since viral contaminants are a major safety consideration with these products, a no. of different methods, including dry heating, vapor heating, filtration and **nanofiltration**, UV and gamma irradn., pasteurization, solvent/detergent (S/D) treatment, **sodium thiocyanate** treatment, and **chromatog.** (immunoaffinity, metal chelation, affinity, and ion exchange), have been developed to remove or inactivate potentially contaminating viruses. Pasteurization and S/D treatment have emerged as the dominant viral inactivation methods. Results summarized in this review demonstrate that pasteurization is the broadest and most rigorous currently available method for removal of potential viral contaminants from plasma-derived products. S/D treatment requires control over a large no. of manufg. parameters and has no ability to inactivate nonlipid-enveloped viruses. Pasteurization requires control over only a small no. of manufg. variables, is easily monitored, and remains effective even if deviations are encountered from specified protein and stabilizer concns. and temp. In addn., pasteurization is effective against a wide range of lipid- and nonlipid-enveloped viruses.
CC 63-0 (Pharmaceuticals)

L36 ANSWER 4 OF 20 HCA COPYRIGHT 2006 ACS on STN
138:272902 Application of **membrane** separation impurity removal process in PAN production. Yuan, Hua-bin; Jin, Zhen (Chemical Fiber Plant, Lanzhou Petrochemical Co., PetroChina, Lanzhou, 730060, Peop. Rep. China). Shihua Jishu Yu Yingyong, 20(6), 385-387, 391

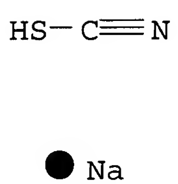
(Chinese) 2002. CODEN: SJYIF4. ISSN: 1009-0045. Publisher: Shihua Jishu Yu Yingyong Bianjibu.

AB The one-step impurity removal process was tested for PAN (polyacrylonitrile) fiber and compared with several other removal processes. The **membrane** sepn. had good effect on impurity of **NaSCN** soln., and the extn. process could be replaced by **membrane** process. The application of **membrane** sepn. impurity removal process, such as the purifn. of distillate, preconcn. in solvent evapn., was discussed.

IT **540-72-7P**
(solvent; application of **membrane** sepn. impurity removal process in polyacrylonitrile fiber prodn.)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



CC 40-2 (Textiles and Fibers)

ST polyacrylonitrile fiber prodn impurity removal **membrane** sepn

IT Impurities
Membranes, nonbiological
Separation
(application of **membrane** sepn. impurity removal process in polyacrylonitrile fiber prodn.)

IT Acrylic fibers, miscellaneous
(application of **membrane** sepn. impurity removal process in polyacrylonitrile fiber prodn.)

IT 25014-41-9, Polyacrylonitrile
(fiber, **membrane**; application of **membrane** sepn. impurity removal process in polyacrylonitrile fiber prodn.)

IT 9003-53-6, Polystyrene 9003-54-7, Acrylonitrile-styrene copolymer 9004-35-7, **Cellulose acetate**
(**membrane**; application of **membrane** sepn. impurity removal process in polyacrylonitrile fiber prodn.)

IT **540-72-7P**
(solvent; application of **membrane** sepn. impurity

removal process in polyacrylonitrile fiber prodn.)

L36 ANSWER 5 OF 20 HCA COPYRIGHT 2006 ACS on STN

138:91298 Metal-chelated **polyamide** hollow fibers for human serum albumin separation. Uzun, Lokman; Denizli, Adil (Department of Chemistry, Biochemistry Division, Hacettepe University, Ankara, Turk.). Journal of Applied Polymer Science, 86(13), 3346-3354 (English) 2002. CODEN: JAPNAB. ISSN: 0021-8995. Publisher: John Wiley & Sons, Inc..

AB Microporous **polyamide** hollow fibers were modified by acid hydrolysis to amplify the reactive groups and subsequent binding of Cibacron Blue F 3GA, then different metal ions (Cu2+, Ni2+, and Co2+) were loaded thereto to form the metal chelates. The hollow fibers were characterized by SEM and the effect of pH and initial concn. of human serum albumin (HSA) on the adsorption of HSA to the metal-chelated hollow fibers were examd. in a batch system. Dye- and metal-chelated hollow fibers had a higher HSA adsorption capacity and showed less nonspecific protein adsorption. The nonspecific adsorption of HSA onto the **polyamide** hollow fibers was 6.0 mg/g. Cibacron Blue F 3GA immobilization onto the hollow fibers increased HSA adsorption up to 147 mg/g. Metal-chelated hollow fibers showed further increases in the adsorption capacity. The max. adsorption capacities of Co2+-, Cu2+-, and Ni2+-chelated hollow fibers were 195, 226, and 289 mg/g, resp. The recognition range of metal ions for HSA from human serum followed the order: Ni(II) > Cu(II) > Co(II). A higher HSA adsorption was obsd. from human serum (324 mg/g). A significant amt. of the adsorbed HSA (up to 99%) was eluted for 1 h in the elution medium contg. 1.0M sodium thiocyanide (**NaSCN**) at pH 8.0 and 25 mM EDTA at pH 4.9. Repeated adsorption-desorption processes showed that these metal-chelated **polyamide** hollow fibers were suitable for HSA adsorption.

CC 40-10 (Textiles and Fibers)
Section cross-reference(s): 9, 63

ST **polyamide** hollow fiber metal chelate human serum albumin sepn

IT Concentration (condition)
pH
(effect on human serum albumin adsorption by metal-chelated **polyamide** hollow fibers)

IT Fibers
(hollow, **polyamide** fibers, reaction product with

Cibacron Blue F 3GA, metal ion complexes; metal-chelated **polyamide** hollow fibers for human serum albumin sepn.)

IT Adsorption
(of human serum albumin by metal-chelated **polyamide** hollow fibers)

IT Desorption
Membrane, biological
(of metal-chelated **polyamide** hollow fibers for human serum albumin sepn.)

IT **Polyamide** fibers, uses
(reaction product with Cibacron Blue F 3GA, metal ion complexes; metal-chelated **polyamide** hollow fibers for human serum albumin sepn.)

IT Albumins, processes
(serum; metal-chelated **polyamide** hollow fibers for human serum albumin sepn.)

IT 14701-22-5D, Nickel ion(2+), complex with Cibacron Blue F 3GA-modified **polyamide** hollow fibers, processes
15158-11-9D, Copper ion(2+), complex with Cibacron Blue F 3GA-modified **polyamide** hollow fibers, processes
22541-53-3D, Cobalt ion(2+), complex with Cibacron Blue F 3GA-modified **polyamide** hollow fibers, processes
(metal-chelated **polyamide** hollow fibers for human serum albumin sepn.)

IT 12236-82-7D, Cibacron Blue F 3GA, reaction product with **polyamide** hollow fibers, metal ion complexes
(metal-chelated **polyamide** hollow fibers for human serum albumin sepn.)

L36 ANSWER 6 OF 20 HCA COPYRIGHT 2006 ACS on STN

137:2114 Comparison of adsorption performances of metal-chelated **polyamide** hollow fibre **membranes** in lysozyme separation. Senel, Serap; Kassab, Ahmed; Arica, Yakup; Say, Ridvan; Denizli, Adil (Department of Chemistry, Hacettepe University, Beytepe, Ankara, Turk.). Colloids and Surfaces, B: Biointerfaces, 24(3-4), 265-275 (English) 2002. CODEN: CSBBEQ. ISSN: 0927-7765. Publisher: Elsevier Science B.V..

AB Com. available microporous **polyamide** hollow fibers are modified by acid hydrolysis to activate the reactive groups and subsequently binding of the ligand Cibacron Blue F3GA. The Cibacron Blue F3GA-modified hollow fibers were loaded with different metal ions (i.e. Zn(II), Cu(II), Ni(II)) to form the metal chelate. The

internal polymer matrix was characterized by SEM. The effects of pH, initial concn. of lysozyme, metal type and temp. on the adsorption of lysozyme to the metal-chelated hollow fibers were examd. in a batch reactor. The non-specific adsorption of lysozyme onto the **polyamide** hollow fibers was 1.8 mg/g. Cibacron Blue F3GA immobilization increased the lysozyme adsorption up to 62.3 mg/g. Metal-chelated hollow fibers showed a significant increase of the adsorption efficiency. Lysozyme adsorption capacities of Zn(II), Cu(II) and Ni(II)-chelated hollow fibers were different. The max. capacities of Zn(II), Cu(II) or Ni(II)-chelated hollow fibers were 144.2, 75.2 and 68.6 mg/g, resp. Significant amt. of the adsorbed lysozyme (up to 97%) was eluted in 1 h in the elution medium contg. 1.0 M **NaSCN** at pH 8.0 and 25 mM EDTA at pH 4.9. Repeated adsorption-desorption process showed that this novel metal-chelated **polyamide** hollow fibers are suitable for lysozyme adsorption.

IT **540-72-7, Sodium thiocyanate**
(**NaSCN** promotes desorption of lysozyme on metal-chelated **polyamide** hollow fiber **membranes** modified with Cibacron Blue F3GA)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

HS— C≡N

● Na

CC 6-3 (General Biochemistry)
Section cross-reference(s): 7

ST lysozyme adsorption metal chelate **polyamide** fiber

IT **Polyamide** fibers, uses
(adducts with Cibacron Blue F3GA; metal-chelated **polyamide** hollow fiber **membranes** modified with Cibacron Blue F3GA ligand permit lysozyme sepn. by adsorption/desorption process)

IT Adsorption
(protein; metal-chelated **polyamide** hollow fiber **membranes** modified with Cibacron Blue F3GA ligand permit lysozyme sepn. by adsorption/desorption process)

IT **540-72-7, Sodium thiocyanate**
(**NaSCN** promotes desorption of lysozyme on metal-chelated **polyamide** hollow fiber **membranes** modified with Cibacron Blue F3GA)

IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 12236-82-7D, Cibacron Blue F3GA, adducts with **polyamide** hollow fiber
(metal-chelated **polyamide** hollow fiber **membranes** modified with Cibacron Blue F3GA ligand permit lysozyme sepn. by adsorption/desorption process)

IT 9001-63-2, Lysozyme
(metal-chelated **polyamide** hollow fiber **membranes** modified with Cibacron Blue F3GA ligand permit lysozyme sepn. by adsorption/desorption process)

L36 ANSWER 7 OF 20 HCA COPYRIGHT 2006 ACS on STN

135:30830 Zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes.** Senel, S.; Say, R.; Arica, Y.; Denizli, A. (Biochemistry Division, Department of Chemistry, Hacettepe University, Ankara, 06242, Turk.). Colloids and Surfaces, A: Physicochemical and Engineering Aspects, 182(1-3), 161-173 (English) 2001. CODEN: CPEAEH. ISSN: 0927-7757. Publisher: Elsevier Science B.V..

AB Dye-affinity and metal chelate affinity adsorption are increasingly used for protein sepn. Synthetic hollow fiber **membranes** have advantages as support matrixes in comparison to conventional bead supports because they are not compressible and they eliminate internal diffusion limitations. The goal of this study was to explore in detail the performance of hollow fibers composed of modified **polyamide** to which Cibacron Blue F3GA and Zn(II) were attached for adsorption of lysozyme. The polymer matrix was characterized by SEM. These dye-affinity and Zn(II) chelated hollow-fibers were used in the lysozyme adsorption-elution studies. The effects of initial concn. of lysozyme and medium pH on the adsorption efficiency of dye-attached and metal-chelated hollow-fibers were studied in a batch reactor. The effect of Zn(II) loading on lysozyme adsorption was also studied. The non-specific adsorption of lysozyme on the **polyamide** hollow-fibers was 1.8 mg g-1. Cibacron Blue F3GA attachment significantly increased the lysozyme adsorption up to 63.2 mg g-1. Lysozyme adsorption capacity of the Zn(II) chelated hollow-fibers (144.2 mg g-1) was

greater than that of the Cibacron Blue F3GA-attached hollow-fibers. A significant amt. of the adsorbed lysozyme (up to 97%) was eluted in 1 h in the elution medium contg. 1.0 M **NaSCN** at pH 8.0 and 25 mM EDTA at pH 4.9. In order to examine the effects of sepn. conditions on possible conformational changes of lysozyme structure, fluorescence spectrophotometry was employed. We conclude that dye- and metal-chelate affinity chromatog. with **polyamide** hollow-fibers can be applied for lysozyme adsorption without causing any significant conformational changes and denaturation. Repeated adsorption/elution processes showed that these novel dye-attached and Zn(II) chelated hollow-fibers are suitable for lysozyme adsorption.

CC 9-3 (Biochemical Methods)
Section cross-reference(s): 7

ST lysozyme adsorption **polyamide** hollow fiber **membrane**

IT **Membranes**, nonbiological
(hollow-fiber; zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

IT Adsorption
(protein; zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

IT **Polyamides**, processes
(reaction products with dye; zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

IT Affinity chromatography
(zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

IT 7440-66-6, Zinc, analysis
(zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

IT 12236-82-7D, Cibacron Blue F3GA, reaction products with **polyamide**
(zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

IT 9001-63-2, Lysozyme 343785-09-1D, PA 386C, reaction products with

dye
(zinc ion-promoted adsorption of lysozyme to Cibacron Blue F3GA-attached microporous **polyamide** hollow-fiber **membranes**)

L36 ANSWER 8 OF 20 HCA COPYRIGHT 2006 ACS on STN
134:27082 Human serum albumin chromatography by Cibacron Blue F3GA-derived microporous **polyamide** hollow-fiber affinity **membranes.** Kassab, A.; Yavuz, H.; Odabasi, M.; Denizli, A. (Biochemistry Division, Department of Chemistry, Hacettepe University, Ankara, Turk.). Journal of Chromatography, B: Biomedical Sciences and Applications, 746(2), 123-132 (English) 2000. CODEN: JCBBEP. ISSN: 0378-4347. Publisher: Elsevier Science B.V..

AB An affinity dye ligand, Cibacron Blue F3GA was covalently attached onto com. available microporous **polyamide** hollow-fiber **membranes** for human serum albumin (HSA) adsorption from both aq. solns. and human plasma. Different amts. of Cibacron Blue F3GA were incorporated on the **polyamide** hollow-fibers by changing the dye attachment conditions, i.e. initial dye concn., addn. of sodium carbonate and sodium chloride. The max. amt. of Cibacron Blue F3GA attachment was obtained at 42.5 μmol g-1 when the hollow-fibers were treated with 3 M HCl for 30 min before performing the dye attachment. HSA adsorption onto unmodified and Cibacron Blue F3GA-derived **polyamide** hollow-fiber **membranes** was investigated batchwise. The non-specific adsorption of HSA was very low (6.0 mg g-1 hollow-fiber). Cibacron Blue F3GA attachment onto the hollow-fibers significantly increased the HSA adsorption (147 mg g-1 hollow-fiber). The max. HSA adsorption was obsd. at pH 5.0. Higher HSA adsorption was obsd. from human plasma (230 mg HSA g-1 hollow-fiber). Desorption of HSA from Cibacron Blue F3GA derived hollow-fibers was obtained using 0.1 M Tris-HCl buffer contg. 0.5 M **NaSCN** or 1.0 M NaCl. High desorption ratios (up to 98% of the adsorbed HSA) were obsd. It was possible to reuse Cibacron Blue F3GA derived **polyamide** hollow-fiber without significant decreases in the adsorption capacities.

CC 9-3 (Biochemical Methods)
Section cross-reference(s): 6

ST albumin affinity chromatog Cibacron Blue F3GA **polyamide** **membrane**

IT **Polyamides**, analysis

(Cibacron Blue F3GA deriv.; human serum albumin chromatog. by Cibacron Blue F3GA-derived microporous **polyamide** hollow-fiber affinity **membranes**)

IT **Membranes**, nonbiological
(hollow-fiber; human serum albumin chromatog. by Cibacron Blue F3GA-derived microporous **polyamide** hollow-fiber affinity **membranes**)

IT Affinity chromatographic stationary phases
Affinity chromatography
Blood plasma
(human serum albumin chromatog. by Cibacron Blue F3GA-derived microporous **polyamide** hollow-fiber affinity **membranes**)

IT Albumins, biological studies
(serum, human; human serum albumin chromatog. by Cibacron Blue F3GA-derived microporous **polyamide** hollow-fiber affinity **membranes**)

IT 12236-82-7D, Cibacron Blue F3GA, **polyamide** deriv.
(human serum albumin chromatog. by Cibacron Blue F3GA-derived microporous **polyamide** hollow-fiber affinity **membranes**)

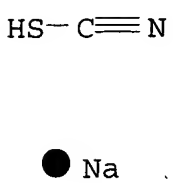
L36 ANSWER 9 OF 20 HCA

130:224322 Solvent spinning of fibers containing an intrinsically conductive polymer. Kinlen, Patrick J.; Frushour, Bruce G. (Zipperling Kessler & Co. (G.m.b.H & Co.), Germany). PCT Int. Appl. WO 9910574 A1 19990304, 60 pp. DESIGNATED STATES: W: CA, FI, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1998-EP5315 19980824. PRIORITY: US 1997-917660 19970825.

AB A fiber contg. an org. acid salt of an intrinsically conductive polymer (e.g., polyaniline) distributed throughout a matrix polymer is provided along with a method for producing such fibers by spinning a soln. which includes an org. acid salt of an intrinsically conductive polymer, a matrix polymer and a spinning solvent into a coagulation bath comprising a nonsolvent for both the org. acid salt of an intrinsically conductive polymer and the matrix polymer. The intrinsically conductive polymer-contg. fibers typically have elec. cond. .ltorsim.10-5 S/cm.

IT **540-72-7**, **Sodium thiocyanate**
(aq. solns., solvents; solvent spinning of fibers contg. intrinsically conductive polymers)

RN 540-72-7 HCA
CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



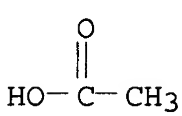
IT **9012-09-3P, Cellulose triacetate**
(fibers; solvent spinning of fibers contg. intrinsically conductive polymers)
RN 9012-09-3 HCA
CN Cellulose, triacetate (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



IC ICM D01F006-96
ICS D01F006-54; D01F006-90; D01F006-92; D01F006-94; D01F006-46; D01F006-48
CC 40-2 (Textiles and Fibers)
IT Acetate fibers, uses
Polyamide fibers, uses
Polyester fibers, uses
Polyolefin fibers
Polyurethane fibers

Vinyon fibers
(solvent spinning of fibers contg. intrinsically conductive polymers)

IT **540-72-7, Sodium thiocyanate**
7646-85-7, Zinc chloride, uses 7664-93-9, Sulfuric acid, uses
7697-37-2, Nitric acid, uses
(aq. solns., solvents; solvent spinning of fibers contg. intrinsically conductive polymers)

IT 9002-86-2P, PVC 9004-34-6P, Cellulose, uses **9012-09-3P, Cellulose triacetate** 25014-41-9P,
Polyacrylonitrile
(fibers; solvent spinning of fibers contg. intrinsically conductive polymers)

L36 ANSWER 10 OF 20 HCA COPYRIGHT 2006 ACS on STN

119:162638 Transport of scandium ion through **cellulose triacetate membranes** containing quaternary ammonium salts as carriers. Sugiura, Masaaki; Hirata, Hirofumi (Natl. Inst. Mater. Chem. Res., Tsukuba, 305, Japan). Chemistry Express, 8(7), 519-22 (English) 1993. CODEN: CHEXEU. ISSN: 0911-9566.

AB Sc fluxes across **cellulose triacetate membranes** contg. mixts. of o-nitrophenyl octyl ether and quaternary ammonium salts possessing 2-4 long alkyl chains were detd. The quaternary ammonium salts acted as carriers of the Sc in the presence of thiocyanates. The flux decreased with increasing length of alkyl chains, and it was also affected by the type of cation of the thiocyanate.

IT **9012-09-3, Cellulose triacetate**
(**membranes**, scandium permeation through, quaternary ammonium compd. chain length and thiocyanate cation effects on)

RN 9012-09-3 HCA

CN Cellulose, triacetate (9CI) (CA INDEX NAME)

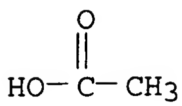
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

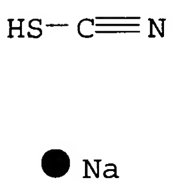
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



IT **540-72-7, Sodium thiocyanate**
(scandium permeation through **cellulose triacetate membranes** in relation to)
RN 540-72-7 HCA
CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)
ST scandium permeation **cellulose triacetate membrane**; quaternary ammonium compd scandium permeation; chain length quaternary scandium permeation; thiocyanate cation effect scandium permeation
IT Quaternary ammonium compounds, properties
(alkyl chain lengths in, scandium permeation through **cellulose triacetate membranes** in relation to)
IT Chains, chemical
(length of, in quaternary ammonium compds., scandium permeation through **cellulose triacetate membranes** in relation to)
IT Permeability and Permeation
(of scandium through **cellulose triacetate membranes**, quaternary ammonium compd. chain length and thiocyanate cation effects on)
IT 2138-24-1, Tetra-n-hexylammonium iodide 3282-73-3, Di-n-dodecyldimethylammonium bromide 4328-13-6, Tetra-n-hexylammonium bromide 5137-55-3, Tri-n-octylmethylammonium

chloride 5922-92-9, Tetra-n-hexylammonium chloride 7173-54-8
(alkyl chain lengths in, scandium permeation through **cellulose triacetate membranes** in relation to)

IT **9012-09-3, Cellulose triacetate**
(**membranes**, scandium permeation through, quaternary ammonium compd. chain length and thiocyanate cation effects on)

IT 7440-20-2, Scandium, properties
(permeation of, through **cellulose triacetate membranes**, quaternary ammonium compd. chain length and thiocyanate cation effects on)

IT 333-20-0, Potassium thiocyanate **540-72-7, Sodium thiocyanate** 556-65-0, Lithium thiocyanate 1762-95-4, Ammonium thiocyanate
(scandium permeation through **cellulose triacetate membranes** in relation to)

L36 ANSWER 11 OF 20 HCA COPYRIGHT 2006 ACS on STN

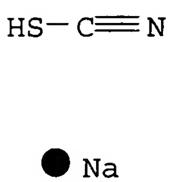
118:8904 Separation and concentration of rare earth ions by liquid **membranes.** Sugiura, Masaaki (Natl. Chem. Lab. Ind., Tsukuba, 305, Japan). Yukagaku, 41(9), 860-6 (Japanese) 1992. CODEN: YKGKAM. ISSN: 0513-398X.

AB Effects of the carrier type and the **membrane** solvent on carrier-mediated transport of trivalent rare earth ions through liq. **membranes** are described. The liq. **membranes** were the supported type, and solvent polymeric **membranes** consisted of **cellulose triacetate** contg. a plasticizer. In counter-transport of rare earth and H ions using β-diketones as carriers, the difference in flux among the rare earths was slight, with the exception of Sc. In transport using Hinokitiol (β-isopropyltropolone), the fluxes for the lanthanides from Sm to Lu were much higher than those from La to Nd. The flux using flavonol increased with increasing at. no. In these transport processes, the flux was affected by the compn. of the **membrane** solvent and by the pH and added anion in the source phase. In co-transport of rare earth and thiocyanate ions using phosphoric acid triesters as carriers, only Sc was transported.

IT **540-72-7, Sodium thiocyanate**
(source phase contg., rare earth ion flux through **membrane** in relation to)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



CC 49-9 (Industrial Inorganic Chemicals)
Section cross-reference(s): 78
ST rare earth ion sepn concn **membrane**; sepn rare earth ion liq **membrane**; concn rare earth ion liq **membrane**
IT **Membranes**
(liq., sepn. and concn. by, of rare earth ions)
IT 78-30-8, Tri-o-tolyl phosphate 78-42-2, Tris(2-ethylhexyl) phosphate 499-44-5, Hinokitiol 563-04-2 577-85-5, 3-Hydroxyflavone
(carrier, rare earth ion flux through **cellulose acetate membrane** in relation to)
IT 126-73-8, Tributyl phosphate, miscellaneous
(carrier, rare earth ion flux through **cellulose acetate membrane** in relation to)
IT 93-91-4, Benzoylacetone 120-46-7, Dibenzoylmethane 326-06-7 326-90-9 326-91-0, Thenoyltrifluoroacetone
(carrier, rare earth ion flux through **membranes** in relation to)
IT 103-85-5, 1-Phenyl-2-thiourea 140-22-7, Diphenylcarbazide 304-88-1, N-Benzoyl-N-phenylhydroxylamine 538-62-5, Diphenylcarbazone 574-13-0, Cupron 622-03-7, Diphenylthiocarbazide 826-81-3, 2-Methyl-8-hydroxyquinoline 1826-28-4 3898-08-6, 1,1-Diphenyl-2-thiourea
(carrier, scandium ion flux through **cellulose acetate membrane** in relation to)
IT 7439-91-0, Lanthanum, miscellaneous 7439-94-3, Lutetium, miscellaneous 7440-19-9, Samarium, miscellaneous 7440-20-2, Scandium, miscellaneous 7440-65-5, Yttrium, miscellaneous
(flux of, through **cellulose acetate membrane** and supported liq. **membrane** contg. β-diketones as carriers, source-phase pH effect on)
IT 7440-10-0, Praseodymium, miscellaneous 7440-27-9, Terbium, miscellaneous 7440-52-0, Erbium, miscellaneous
(flux of, through **cellulose acetate**

membrane contg. β-diketones as carriers,
source-phase pH effect on)

IT 9004-35-7, **Cellulose acetate**
(**membranes**, liq., sepn. and concn. by, of rare earth ions)

IT 78-51-3, Tris(2-n-butoxyethyl) phosphate 2528-38-3, Triamyl phosphate 9016-45-9, Polyoxyethylene nonylphenyl ether 26266-58-0, Span 85 37682-29-4, o-Nitrophenyl octyl ether
(plasticizer contg., rare earth ion flux through **membranes** in relation to)

IT **540-72-7, Sodium thiocyanate**
1762-95-4, Ammonium thiocyanate 7601-89-0, Sodium perchlorate 7631-99-4, Sodium nitrate, miscellaneous 7647-14-5, Sodium chloride, miscellaneous
(source phase contg., rare earth ion flux through **membrane** in relation to)

IT 333-20-0, Potassium thiocyanate 556-65-0, Lithium thiocyanate
(source phase contg., scandium ion flux through **membrane** in relation to)

L36 ANSWER 12 OF 20 HCA COPYRIGHT 2006 ACS on STN

116:213295 Color-changing device for monitoring shelf-life of perishable products. Patel, Gordhanbhai (JP Laboratories, Inc., USA). U.S. US 5053339 A 19911001, 28 pp. (English). CODEN: USXXAM. APPLICATION: US 1988-266690 19881103.

AB The indicator has an activator tape and an indicating tape bound together by water-impermeable pressure-sensitive adhesives. The activator (e.g. citric acid) can diffuse through the matrix of the device to react with the indicator (e.g. pentamethoxy triphenylmethanol) to produce a color change. The device has an activation energy and rate const. for the color change that are substantially the same as those for deterioration of a perishable product such as food in the temp. range of monitoring. The color intensifies with time and temp. Many different indicator-activator pairs were tested and the effects of the matrixes contg. these compds. on the activation energy was examd.

IT **540-72-7, Sodium thiocyanate**
(color-changing tape contg., as activator, for monitoring shelf-life of perishable products)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

$HS-C\equiv N$

● Na

IC ICM G01N031-22
INCL 436002000
CC 17-4 (Food and Feed Chemistry)
IT Acrylic polymers, uses
Alkyd resins
Aminoplasts
Epoxy resins, uses
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Rubber, synthetic
Urethane polymers, uses
(color-changing tape contg., for monitoring shelf-life of perishable products)
IT 102-76-1, Triacetin 111-14-8, Heptanoic acid **540-72-7**, **Sodium thiocyanate** 7720-78-7, Ferrous sulfate 7727-54-0, Ammonium persulfate 7757-83-7, Sodium sulfite 50-81-7, Vitamin C, uses 60-01-5, Tributyrin 60-33-3, Linoleic acid, uses 65-85-0, Benzoic acid, uses 124-04-9, Adipic acid, uses 144-55-8, Sodium bicarbonate, uses 497-19-8, Sodium carbonate, uses
(color-changing tape contg., as activator, for monitoring shelf-life of perishable products)
IT 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-35-4, Phenol-formaldehyde polymer 9004-35-7, **Cellulose acetate** 108-05-4, Vinyl acetate, uses
(color-changing tape contg., for monitoring shelf-life of perishable products)

L36 ANSWER 13 OF 20 HCA
113:192626 Preparation of polyacrylonitrile-based compositions. Stoy, Vladimir A.; Lovy, Jan; Tong, Shiu Bor (Kingston Technologies, L. P., USA). Eur. Pat. Appl. EP 331521 A2 19890906, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1989-302165 19890303.

PRIORITY: US 1988-164450 19880304.

AB The title compns. comprise a polyacrylonitrile (I) polymer matrix component having morphol. that results from coagulating I polymer mols. from soln., and a water-sol. second component which is interpenetrated in the I matrix. Thus, a soln. of 10% I in a 50% aq. **Na thiocyanate** was cast on a glass plate to give a **membrane**, which was crosslinked by a mixt. of a liq. cyclic silicone monomer and silicone crosslinking agent in the presence of 0.1% aq. NaOH to give a transparent interpenetrating polymer composite. Hydrophilic and rigid lenses with high O permeation could be obtained from this polymer composite.

IT **9012-09-3P, Cellulose triacetate**
(compns. with polyacrylonitrile matrix, prepn. of)

RN 9012-09-3 HCA

CN Cellulose, triacetate (9CI) (CA INDEX NAME)

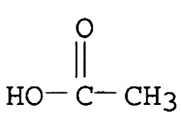
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-19-7
CMF C2 H4 O2



IC ICM C08L033-20
ICS C08J003-20; C08J003-00

CC 37-3 (Plastics Manufacture and Processing)

IT 50-29-3P, preparation 61-73-4P, Methylene Blue 115-86-6P, Triphenyl phosphate **9012-09-3P, Cellulose triacetate** 41375-99-9P, Hexahydronaphthalene 63444-56-4DP, polymers with methacryloylethyl- and trimethylsilyl-terminated d-Me siloxanes 127398-78-1P
(compns. with polyacrylonitrile matrix, prepn. of)

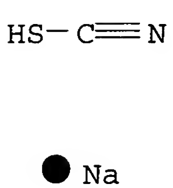
L36 ANSWER 14 OF 20 HCA COPYRIGHT 2006 ACS on STN
109:151707 Coupled transport of zinc ion through **cellulose acetate**-plasticizer **membranes** made from mulberry xylem. Urita, Shoji; Ota, Teruo; Sugiura, Masaaki; Kikkawa, Masayoshi (Fukushima Seric. Exp. Stn., Fukushima, 960-07, Japan). Nippon Sanshigaku Zasshi, 57(2), 123-8 (Japanese) 1988. CODEN: NISZAQ. ISSN: 0037-2455.

AB The coupled transport of Zn(II) through **cellulose acetate**-plasticizer **membranes** made from mulberry xylem was examd., using a mixt. of tributoxyethyl phosphate and o-nitrophenyloctyl ether as a plasticizer and bathophenanthroline as a carrier of Zn(II) in the **membrane.** The flux of Zn through the **membrane** increased with an increase in concn. of the carrier in **membrane**, concn. of NaCl added in soln. as the source of removal, or concn. of Zn(II). The double reciprocal plots of the Zn flux vs. [NaCl] or [Zn(II)] in soln. were linear. Upon using **NaSCN** as the source of removal, the Zn flux reached a high value of 29 + 10-8 mol cm-2 h-1.

IT **540-72-7, Sodium thiocyanate**
(coupled transport of zinc ion through **cellulose acetate**-plasticizer **membranes** in presence of)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 38

ST plasticizer **cellulose acetate membrane** transport; zinc transport **cellulose acetate membrane**

IT Diffusion
(of zinc ions, through **cellulose acetate** -plasticizer **membranes** made from mulberry xylem)

IT Mulberry
(xylem, **cellulose acetate**-plasticizer

membranes made from, coupled transport of zinc ion through)

IT Plant tissue
(xylem, mulberry, **cellulose acetate** -plasticizer **membranes** made from, coupled transport of zinc ion through)

IT 1662-01-7, Bathophenanthroline
(carrier, for zinc ion, coupled transport through **cellulose acetate**-plasticizer **membranes** in relation to)

IT **540-72-7, Sodium thiocyanate**
(coupled transport of zinc ion through **cellulose acetate**-plasticizer **membranes** in presence of)

IT 7647-14-5, Sodium chloride, properties
(coupled transport of zinc ion through **cellulose acetate**-plasticizer **membranes** in presence of)

IT 23713-49-7, properties
(coupled transport of, through **cellulose acetate**-plasticizer **membranes** made from mulberry xylem)

IT 9004-35-7, **Cellulose acetate**
(plasticizer-contg., **membranes**, made from mulberry xylem, coupled transport of zinc ions through)

IT 78-51-3 37682-29-4
(plasticizers, **cellulose acetate** contg., **membranes**, made from mulberry xylem, coupled transport of zinc ion through)

L36 ANSWER 15 OF 20 HCA

92:216987 Regenerated cellulose hollow fiber. Ishida, Masamichi; Kamo, Jun; Takemura, Toru; Minami, Shunsuke; Kamada, Kensuke (Mitsubishi Rayon Co., Ltd., Japan). Eur. Pat. Appl. EP 8536 19800305, 32 pp. (English). CODEN: EPXXDW. APPLICATION: EP 1979-301711 19790821.

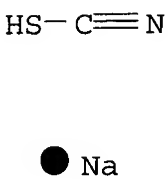
AB Extruding **cellulose acetate** soln. (I) through an annular slit into a coagulation bath, and hydrolyzing the resulting extrudate with NaOH soln. gave the title product for use as a permeable **membrane** for dialysis and ultrafiltration. Thus, a soln. of I 25, dimethylacetamide (II) 64, H_2O 5, and $ZnCl_2$ 6 parts was extruded into a 30% aq. II bath to form a tubular extrudate, which was drawn 1.3 times the original length in H_2O, immersed in 3% NaOH soln. contg. 20% AcONa (based on NaOH wt.) for 1 h at 50°, and plasticized with 5% glycerol to give

regenerated cellulose hollow fiber with 63% crystallinity, 81.6% crystallite orientation degree, 112 Å crystallite size, 0.59 g/d wet strength, 13.5% wet elongation, and 3.4 mL/m2·h·mm Hg water permeability.

IT **540-72-7**
(in manuf. of regenerated cellulose hollow fibers, from **cellulose acetate**)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



IC D01D005-24; B01D013-04

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 63

ST regenerated cellulose hollow fiber manuf; **acetate cellulose** sapon hollow fiber; dialysis hollow fiber **membrane**

IT Saponification
(of **cellulose acetate** fibers, regenerated **cellulose** hollow fibers from)

IT **Membranes** and Diaphragms
(hollow-fiber, regenerated cellulose, for dialysis)

IT **540-72-7** 7705-08-0, uses and miscellaneous 10034-81-8 10124-37-5
(in manuf. of regenerated cellulose hollow fibers, from **cellulose acetate**)

L36 ANSWER 16 OF 20 HCA COPYRIGHT 2006 ACS on STN

84:122660 Permeabilities to salts and water of macrocyclic polyether-**polyamide membranes.** Shchori, Ehud; Jagur-Grodzinski, Joseph (Dep. Plast. Res., Weizmann Inst. Sci., Rehovot, Israel). Journal of Applied Polymer Science, 20(3), 773-88 (English) 1976. CODEN: JAPNAB. ISSN: 0021-8995.

GI For diagram(s), see printed CA Issue.

AB The diffusion coeff. of Na+ ions in PC-6 (I) [32288-60-1] **membranes**, detd. by desorption expts., varied from 5 +

10-12 in loose PC-6 **membranes** to 1.7 + 10-9 cm2/sec in **membranes** of polymeric alloys contg. 30% poly(vinyl pyrrolidone) (II) [9003-39-8]. **NaSCN [540-72-7]** was strongly adsorbed by PC-6. Replacement of SCN- by Cl- caused a 3-fold decrease in soly. Li+ was ≈10 times less sol. than Na+. The soly. of water in PC-6 was due to the combined hydrophilicities of the amide and ether loops. The mobility of the adsorbed Na+ ions in the polymeric network was low. **Membranes** passed from hexafluoroisopropanol or from **NaSCN** solns. in DMF were permselective and highly permeable to water. Water permeation expts. with **membranes** contg. II gave diffusion coeff. in the range 2-5 + 10-7 cm2/sec. The apparent energy of activation of the diffusion of Na+ in these **membranes** was the same, ≈12 kcal, as the energy of activation of the decomplexation of the Na-crown complex. The permeability characteristics PC-6 **membranes** were affected by their history because of reversible changes in the structure of the polymeric network in the presence and absence of absorbed salts. II had a stabilizing effect on the permeability of the **membranes.** Reverse osmosis expts. with PC-6 **membranes** and **membranes** contg. II gave salt rejection values 95-9.5%, and permeabilities to water ≥1 order of magnitude greater than those of unmodified arom. **polyamides.**

IT **540-72-7**
(diffusion coeff. of, in crown polyether-**polyamide** permselective **membranes**)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

HS—C≡N

● Na

CC 36-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 61

ST polyether **polyamide** permselective **membrane**; crown **polyamide** permselective **membrane**; polyvinylpyrrolidone crown **polyamide membrane**;

osmosis **membrane** crown **polyamide**
IT Polyethers
(crown **polyamide**-, permselective **membranes**)
IT **Polyamides**, uses and miscellaneous
(crown polyether, permselective **membranes**)
IT Permeability and Permeation
(of salts and water in crown polyether-**polyamide** **membranes**)
IT **Membranes**
(permselective, crown polyether-**polyamide**, permeability of)
IT 9003-39-8
(crown polyether-**polyamide membranes** contg., permeability of)
IT **540-72-7** 556-65-0 2092-17-3 7647-14-5, properties
(diffusion coeff. of, in crown polyether-**polyamide** permselective **membranes**)
IT 32069-37-7 32288-60-1
(**membranes**, permeability of)

L36 ANSWER 17 OF 20 HCA COPYRIGHT 2006 ACS on STN
83:102909 Removal of heavy metal pollutants from aqueous media. Davis, Howard J.; Lee, Leonard A. (Celanese Corp., USA). U.S. US 3872001 19750518, 6 pp. (English). CODEN: USXXAM. APPLICATION: US 1973-365792 19730531.
AB Pollutant heavy metal cations are removed from aq. media by passing the pollutant-contg. aq. media through a substantially water insensitive, flexible base, porous polymeric film thereby forming a complex with the pollutant metal cations to be removed from the aq. media. Generally, any type of polymer contg. a substantial no. of free hydroxyl groups, $\geq$0.01-3/g, may be utilized as long as the polymer is filmforming, and that the film is capable of being rendered porous, preferably microporous. Examples of the types of polymers which may be utilized include polyolefins, polyacetates, **polyamides**, polyesters, polyalkylene sulfides, and polyarylene oxides, which have been copolymd. with minor amts. of hydroxyl-contg. monomers. Likewise, hydroxyl-contg. acrylics and cellulosics may be utilized. In operation, the film bed or column which has been utilized to remove the heavy metal pollutants from water may be regenerated by reaction with certain regenerative ions which when passed over the metal complex form a more stable complex with the heavy metal pollutant ion such as Hg than is formed between

the chelated substrate and the heavy metal pollutant. An example of such a regenerative ion for Hg and EDTA complexes is K or **Na thiocyanate.** In continuous operation a preferred method involves the use of a long belt of the desired acid-contg. film. Water is passed through it and the belt is continuously moved from contact with the polluting water to contact with a thiocyanate soln. which acts to regenerate the chelating sites on the belt.

IC C02B
INCL 210058000
CC 60-2 (Sewage and Wastes)
Section cross-reference(s): 37
IT **Membranes**
(**cellulose acetate** and **cellulose acetate**-phthlate and EDTA, for metal removal from waste water)
IT Waste water treatment
(metal removal, **membranes** from **cellulose acetate** and **cellulose acetate** -phthlate and EDTA for)
IT 60-00-4, uses and miscellaneous
(**cellulose acetate membrane** -treated, for metal removal from waste water)
IT 9004-35-7 9004-38-0
(**membranes** contg., EDTA-treated, for metal removal from waste water)
IT 7439-97-6, uses and miscellaneous 7440-43-9, uses and miscellaneous
(removal of, from waste water, EDTA-treated **cellulose acetate membranes** for)

L36 ANSWER 18 OF 20 HCA COPYRIGHT 2006 ACS on STN
67:109606 p-(1,2,4-Thiadiazol-5-ylazo)anilines. (Eastman Kodak Co.). Fr. FR 1456265 19661021, 11 pp. (French). CODEN: FRXXAK. APPLICATION: FR 19651129.
GI For diagram(s)., see printed CA Issue.
AB Compds. of the general formula I give red and violet dyeings on **cellulose acetate**, modacrylics, **polyamides** , and polyestters. Thus, a mixt. of 76 g. thiourea, 142 g. MeI, and 330 ml. MeOH was refluxed for 1 hr. to give a mixt. contg. RSC(NH2):NH (II, R = Me). A soln. of 100 g. **NaSCN** in 600 ml. MeOH was added, the mixt. cooled to -15°, treated with NaOMe (46 g. Na and 600 ml. MeOH), treated with a soln. of 160 g. Br

in 425 ml. MeOH, and agitated for 2 hrs. at room temp. to give 71% III (X = MeS) (IV), m. 139-42° (H2O). Similarly prepd. were the following III (X, m.p., and % yield given): EtS, 92-6° (C6H6-hexane), -; PrS, 74° (H2O-EtOH), 77.2; iso-PrS, -, -; tert-BuS, 203°, -. The following II were also prepd. (R and m.p. given): Pr, 59-61° (EtOH-Et2O); iso-Pr, 76°. A soln. of 7.25 g. IV in 100 ml. HOAc was heated, cooled to 30°, treated with 20.5% H2O2 (30% soln.), and agitated at 50° to give 65.2% III (X = MeSO2), m. 196.8°. Similarly prepd. were the following IV (X and m.p. given): EtSO2, 136-9°; PrSO2, -; tert-BuSO2, -. IV (2.94 g.) was diazotized and coupled with 0.82 g. m-MeC6H4N(CH2CH2CN)CH2CH2OH to give 70.3% I (X = MeS, Y = H, Z = Me, R = CH2CH2CN, R' = CH2CH2OH), red on **cellulose acetate**, red-orange on polyesters, and violet-red on **polyamides** and polyacrylonitrile. Similarly prepd. were the following I (R, R', X, Y, Z, and shades on **cellulose acetate**, polyesters, **polyamides**, and modacrylics given): Et, CH2CH2O2CNHPh, MeS, H, H, red rose, orange-red, wine red, -; Et, CH2CH2NHSO2Me, MeS, H, Me, violet-red, red-rose, violet, violet; cyclohexyl, CH2CH2OH, Me, H, H, red-violet, red, violet-red, violet; Et, CH2CH2CN, MeSO2, H, Me, red-violet, rose-red, -, red-violet; CH2CH2CN, PhCH2, MeSO2, H, H, wine red, -, -, -; CH2CH2CN, CH2CH2OH, MeSO2, H, Me, wine red, -, -, -; CH2CH2OH, CH2CH2OH, EtS, MeO, AcNH, violet, violet, -, -; CH2CH2OH, CH2CHF2, EtS, H, Me, -, -, -, -; CH2CH2OH, CH2CH2OH, EtSO2, H, Cl, red-violet, red-violet, red-violet, red-violet; CH2CH2CN, CH2CH2OAc, MeS, H, Me, -, -, -, -; CH2CH2CN, CH2CH2OC(S)NHPh, MeS, H, H, -, -, -, -; H, CH2CH(OH)CH2OH, PrS, EtO, AcNH, deep violet, deep violet, deep violet, deep violet; CH2CH2CN, CH2CH2OH, tert-BuSO2, H, Me, wine red, -, -, -.

IC C09B; D06P

CC 40 (Dyes, Fluorescent Brightening Agents, and Photosensitizers)

ST POLYESTERS DYES; ANILINES DYES; THIADIAZOLES DYES; AZO MONO DYES; **CELLULOSE ACETATE** DYES; MODACRYLICS DYES; **POLYAMIDES** DYES

L36 ANSWER 19 OF 20 HCA COPYRIGHT 2006 ACS on STN

55:90231 Original Reference No. 55:17023i,17024a-c Disazo dyes. Sureau, Robert F. M.; Alicot, Marie J. (Compagnie francaise des matieres colorantes). FR 1224183 19600622 (Unavailable). APPLICATION: FR .

AB Disazo dyes, derivs. of 2,6-bis-(p-aminophenylazo)benzo[1,2-d:4,5-

d']bisthiazole, with a suitable dispersion agent, dye **cellulose acetate** and **polyamide** fibers from aq. baths in fast colors, red to violet. Their quaternary salts are H2O sol., dyeing cotton, silk, leather, and polyacrylic fibers blue shades, fast to washing and light. To 27 parts p-phenylenediamine in 450 parts AcOH was added 101 parts **NaSCN**, and in 1 hr., 100 parts Br in 75 parts AcOH at <40°. After 12 hrs. agitation, the filtered product in 2000 parts boiling H2O was neutralized with 30% Na2CO3, filtered off, washed with H2O, and dried at 70-80°, yielding 53-4 parts 2,6-diaminobenzo[1,2-d:4,5-d']bisthiazole (I). I (8.88 parts), in 20 parts by vol. 66° B.acte.e. H2SO4 and 150 parts by vol. 80% AcOH, was tetrazotized and coupled with 16 parts Ph2NMe (II) in 75 parts by vol. AcOH at 0-5°. After 2 hrs., 750 parts cold H2O was added, and the ppt. filtered, dissolved in 750 parts cold H2O, neutralized with AcONa, filtered off, washed with H2O, and dried at 70° to give 22-3 parts dye. This product (7 parts) was dissolved in 400-500 parts hot PhCl, the soln. was filtered, and 12 parts by vol. Me2SO4 in 10 parts PhCl was added to the boiling filtrate. After 3/4 hr., the pptd. dye was filtered, dissolved in H2O, filtered, and the dye pptd. with ZnCl2 and NaCl. Acrylic fibers were dyed greenish blue. Replacing II by PhNEt2 gave a product which dyed **cellulose acetate** bluish red and **polyamides** and polyesters violet-red.

CC 25 (Dyes and Textiles)

IT Dyes
(disazo, 2,6-diaminobenzo[1,2-d:4,5-d']bisthiazole N,N-disubstituted anilines and their quaternary derivs., leather, acrylic polymers, cotton, **polyamides**, polyesters and silk)

L36 ANSWER 20 OF 20 HCA COPYRIGHT 2006 ACS on STN

55:15594 Original Reference No. 55:3071d-h Water-insoluble monoazo dyes. Merian, Ernest (Sandoz Ltd.). CH 346632 19600715 (Unavailable). APPLICATION: CH .

AB The prepn. of dyes of the general formula 2,4,5-Y [(ZCH2)2N] (X)C6H2N:**NASCN**, where A is a 1,4-phenylene group substituted in the 2-position by a neg. substituent, a 1,4-naphthalene, 2,5-thiophene, a 2,5-thiadiazole, a 2,5-thiazole, or a 2,6-benzothiazole residue, X and Y = H, halogen, Me, Et, MeO, or EtO, and Z = CH2OH and (or) CH2CN, is described. Dry NaNO2 3.8 added at 60-5° to H2SO4 45, cooled after 1 hr. to 5°,

treated dropwise with EtCO2H 8 and AcOH 42 and then at 0°
with 2,4-MeSO2(NCS)C6H3NH2 (I) 11.4, the mixt. treated again with
EtCO2H 8 and AcOH 42 and after 3 hrs. with urea 1, mixed with
m-MeC6H4N(CH2CH2OH)2 (II) 10 in H2O 50 and 30% HCl 10, treated with
NaOAc 100, dild. with H2O 50 parts, stirred, and filtered after 20
hrs., and the residue washed and dried gave a dye, m. 131°,
red in concd. H2SO4; it dyes **cellulose acetate**
red shades of good fastness. o-MeSO2C6H4NH2 51.3, m. 66°,
NH4SCN 285, and H2O 300 treated dropwise at 60° with
CuSO4.5H2O 168 in H2O 525 parts, stirred 1 hr. at 60°, and
filtered, the residue boiled with H2O, and the aq. ext. cooled gave
I. A similar run with I and PhN(CH2CH2CN)CH2CH2OH (III), m.
68°, 10 instead of II 10 parts gave a dye, red in concd.
H2SO4, which dyes **cellulose acetate** fast orange
shades. 2-Amino-6-thiocyanobenzothiazole (m. 198°) 20.7,
added to NaNO2 7.6 in H2SO4 90 at 60-5°, processed in the
usual manner and coupled with III 20 parts gave a dye, m.
164°, orange in concd. H2SO4, which dyes bluish red shades.
A similar run using 2-amino-5-thiocyanothiazole, m. 142°,
15.7 parts instead of the benzothiazole deriv. gave a dye, m.
130°, yellow in concd. H2SO4, which dyes **cellulose
acetate** from an aq. dispersion ruby-red, and
polyamide fibers red-violet shades.

CC 25 (Dyes and Textiles)

=> d 137 1-11 cbib abs hitstr hitind

L37 ANSWER 1 OF 11 HCA COPYRIGHT 2006 ACS on STN

139:360799 Fourteen Protomers Compose the Oligomer III of the
Proton-rotor in Spinach Chloroplast ATP Synthase. Seelert, Holger;
Dencher, Norbert A.; Muller, Daniel J. (Department of Chemistry,
Physical Biochemistry, Darmstadt University of Technology,
Darmstadt, D-64287, Germany). Journal of Molecular Biology, 333(2),
337-344 (English) 2003. CODEN: JMOBAK. ISSN: 0022-2836.
Publisher: Elsevier.

AB Three fundamentally different chloroplast ATP synthase samples of
increasing complexity were visualized by at. force microscopy. The
samples are distinguishable in respect to the isolation technique,
the detergent employed, and the final subunit compn. The
homo-oligomer III was isolated following SDS treatment of ATP
synthase, the proton-turbine III+IV was obtained by blue-native

electrophoresis, and complete CFO was isolated by anion exchange **chromatog.** of **NaSCN** splitted ATP synthase. In all three ATP synthase subcomplexes 14 and only 14 circularly arranged subunits III composed the intact transmembrane rotor. Therefore, 14 protomers built the **membrane**-resident proton turbine. The obsd. stoichiometry of 14 is not a biochem. artifact or affected by natural growth variations of the spinach, as previously suggested. A correlation between the presence of subunit IV in the imaged sample and the appearance of a central protrusion in the narrower orifice of the oligomeric cylinder III14 has been obsd. In contrast to current predictions, in chloroplast FO the subunit IV can be found inside the cylinder III14 and not at its periphery, at least in the reconstituted 2D arrays imaged.

CC 7-3 (Enzymes)

L37 ANSWER 2 OF 11 HCA COPYRIGHT 2006 ACS on STN

138:29585 Ultrafiltration of surfactant solutions. Urbanski, Radoslaw; Goralska, Elzbieta; Bart, Hans-Joerg; Szymanowski, Jan (Institute of Chemical Technology and Engineering, Poznan University of Technology, Poznan, 60-965, Pol.). Journal of Colloid and Interface Science, 253(2), 419-426 (English) 2002. CODEN: JCISA5. ISSN: 0021-9797. Publisher: Elsevier Science.

AB The ultrafiltration of colloid solns. contg. CTAB, SDS, and alkylpolyglucoside (APG) through hydrophilic **membranes** with a 10,000 mol. wt. cut-off from regenerated cellulose was studied. The effects of exptl. conditions on the permeate flux and secondary resistance were detd. Both CTAB and APG were convenient surfactants for ultrafiltration, as high permeability of their solns. was obsd. The secondary resistance was always significantly lower than the resistance of the **membrane.** Addnl., electrolytes had a relatively weak neg. effect upon ultrafiltration fluxes. SDS was the least convenient surfactant due to formation of a gel layer, susceptibility of its colloid solns. to electrolyte content, and a high secondary resistance. The concn. of the surfactant in the permeate could increase above crit. micelle concn., esp. under conditions inducing high polarization. Migration of CTAB on the surface of pores seemed responsible for that transfer.

CC 66-4 (Surface Chemistry and Colloids)

IT 144-55-8, Sodium hydrogencarbonate, uses 540-72-7, **Sodium thiocyanate** 7647-14-5, Sodium chloride, uses
(effect on **ultrafiltration** of micellar surfactant

solns.)

L37 ANSWER 3 OF 11 HCA COPYRIGHT 2006 ACS on STN
123:316177 Producing method for polyacrylonitrile filtration **membrane.** Cai, Bangxiao (Hangzhou Water Treatment Technology Research and Development Center, Peop. Rep. China). Faming Zhuanli Shenqing Gongkai Shuomingshu CN 1103604 A 19950614, 5 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1994-116066 19940915.
AB The process is carried out by casting a polyacrylonitrile contg. sodium thiocyanate aq. soln. into a film and coagulating in water to form a **membrane.**
IC ICM B01D071-42
CC 38-2 (Plastics Fabrication and Uses)
ST casting polyacrylonitrile filtration **membrane**; **sodium thiocyanate** polyacrylonitrile **filtration membrane**
IT Molding of plastics and rubbers
(casting, film, producing method for polyacrylonitrile filtration **membrane**)
IT **Membranes**
(hollow-fiber, producing method for polyacrylonitrile filtration **membrane**)
IT Filters and Filtering materials
(**membranes**, producing method for polyacrylonitrile filtration **membrane**)
IT 540-72-7, Sodium thiocyanate
(producing method for polyacrylonitrile filtration **membrane**)
IT 25014-41-9, Polyacrylonitrile
(producing method for polyacrylonitrile filtration **membrane**)

L37 ANSWER 4 OF 11 HCA COPYRIGHT 2006 ACS on STN
120:56595 Process for removing colored components from recovered inorganic solvents for polyacrylonitrile. Kawasaki, Shiro; Kohara, Noriyuki (Japan Exlan Co., Ltd., Japan). Eur. Pat. Appl. EP 556003 A1 19930818, 6 pp. DESIGNATED STATES: R: ES, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1993-300873 19930205. PRIORITY: JP 1992-61253 19920214.
AB The title process, which does not cause an appreciable decrease in the conc. of active components, consists of using a reverse osmosis

membrane whose NaCl rejection is in the range of 10-97%
under a permeation pressure of $\leq$20 kg/cm2. Thus, permeation
of an aq. soln. contg. Na thiocyanate (I) by using a reverse osmosis
membrane gave a permeate having I 15.1%, and APHA color 0,
vs. 15.2, and 180, resp., before permeation.

IC ICM B01D061-02
ICS C02F001-44

CC 40-2 (Textiles and Fibers)
Section cross-reference(s): 37

ST thiocyanate aq soln polyacrylonitrile solvent; acrylic fiber
thiocyanate solvent decoloration; reverse osmosis **membrane**
decoloration solvent; recovered polyacrylonitrile solvent
decoloration

IT Reverse osmosis
(**membranes**, for removal of colored components from
recovered inorg. solvents for polyacrylonitrile)

IT 540-72-7, **Sodium thiocyanate** 7646-85-7, Zinc
chloride, uses 7697-37-2, Nitric acid, uses
(aq. solns., **recovered**, removal of colored components
from, as solvents for polyacrylonitrile)

L37 ANSWER 5 OF 11 HCA COPYRIGHT 2006 ACS on STN

118:209008 Pretreatment of samples with sodium thiocyanate for
microorganism determination by immunoassay. Yokoyama, Kazue;
Myazaki, Choko (Meidensha Electric Mfg. Co., Ltd., Japan). Jpn.
Kokai Tokkyo Koho JP 05034350 A2 19930209 Heisei, 6 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1991-188442 19910729.

AB For microorganism (e.g. Escherichia coli) detn. in a suspension by
membrane filter concn., sonication, and subsequent
immunoassay, the sample is pretreated with Na thiocyanate
($\geq$0.04 M to improve the microorganism recovery in the
filtration and, thus, the anal. accuracy, reproducibility, and
reliability.

IC ICM G01N033-569
ICS G01N033-531

CC 9-10 (Biochemical Methods)
Section cross-reference(s): 10

IT Escherichia coli
Microorganism
(detn. of, by immunoassay, sample pretreatment with
sodium thiocyanate for **filtration** in)

IT Immunoassay

(microorganism detn. by, sample pretreatment with **sodium thiocyanate** for **filtration** in)

IT Feces
(Escherichia coli detn. in, by immunoassay, sample pretreatment with **sodium thiocyanate** for **filtration** in)

IT Filters and Filtering materials
(**membranes**, microorganism suspension concn. on, for immunoassay, sample pretreatment with sodium thiocyanate in relation to)

L37 ANSWER 6 OF 11 HCA COPYRIGHT 2006 ACS on STN

117:147420 Isolation of Casparian strips from pea roots. Karahara, Ichirou; Shibaoka, Hiroh (Fac. Sci., Osaka Univ., Toyonaka, 560, Japan). Plant and Cell Physiology, 33(5), 555-61 (English) 1992. CODEN: PCPHA5. ISSN: 0032-0781.

AB Casparian strips were isolated from roots of pea seedlings. The plasma **membrane** was firmly attached to the wall of the individual cells in the isolated Casparian strip. The outer electron-dense lamella of the plasma **membrane**, which is characteristic of the **membrane** of the Casparian strip, was not removed from the isolated Casparian strip by treatment with either 1 M NaCl or 2 M sodium thiocyanate. Although treatment with 1% Triton X-100 disrupted the lamellar structure of the **membrane** and removed most of the electron-dense material of the outer lamella, no detectable polypeptides were extd. by treatment of isolated Casparian strips with 1% Triton X-100. Small amts. of electron-dense material remained after treatment with Triton X-100 and this material seemed to be removed almost entirely by subsequent treatment of the same sample with 2% SDS. Since polypeptides of 46, 30 and 20 kDa, which were detected in the ext. obtained by treatment with SDS, were not detected in an ext. of total cell walls of pea roots, it seems possible that these polypeptides are specific to the Casparian strip and, therefore, that they may be responsible singly or together for the adhesion of the plasma **membrane** to the cell wall at the Casparian strip.

CC 11-8 (Plant Biochemistry)

IT 540-72-7, **Sodium thiocyanate** 9002-93-1, Triton X-100
(in **isolation** of Casparian strips from pea root)

L37 ANSWER 7 OF 11 HCA COPYRIGHT 2006 ACS on STN
115:15572 Virus inactivation in blood products by **sodium thiocyanate** and **ultrafiltration.** Hrinda, Michael E.; D'Alisa, Rose; Tarr, George Crissman (Rorer International (Overseas), Inc., USA). PCT Int. Appl. WO 9015613 A1 19901227, 39 pp. DESIGNATED STATES: W: CA, JP; RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1990-US3355 19900613. PRIORITY: US 1989-366855 19890615.

AB Viruses are inactivated in blood products by treatment with a disinfectant, preferably NaSCN, in combination with a phys. process, preferably ultrafiltration. Human immunodeficiency virus-infected factor IX soln. (2 mL) was treated with 1 mL buffer (0.01 M Tris-HCl and 0.02 M EDTA, pH 8) and 1 mL 6 M NaSCN to inactivate the virus. Further inactivation occurred by ultrafiltration, using 6.2 nm pore-diam. **membrane.** The method does not cause protein denaturation.

IC ICM A61K035-14
ICS A61K035-16; A61K037-02; C12N009-06; C07K003-06; C07K003-28; C07K003-02

CC 63-3 (Pharmaceuticals)

IT Antibodies
(against hepatitis and human immunodeficiency virus, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Virus, animal
(inactivation of, in blood products, by **sodium thiocyanate** and **ultrafiltration**)

IT Blood corpuscle
(lysate, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Blood
(products, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Blood plasma
Blood serum
Albumins, biological studies
Fibronectins
Globulins, biological studies
Hemoglobins
Immunoglobulins
Interferons
Orosomucoids

Prealbumins
Proteins, specific or class
Transferrins
(virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Lipoproteins
(α-1-, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Immunoglobulins
(A, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Immunoglobulins
(G, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Immunoglobulins
(M, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Proteins, specific or class
(c, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Virus, animal
(hepatitis B, inactivation of, in blood products, by **sodium thiocyanate** and **ultrafiltration**)

IT Virus, animal
(human immunodeficiency, inactivation of, in blood products, by **sodium thiocyanate** and **ultrafiltration**)

IT Lymphokines and Cytokines
(interleukin 2, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Agglutinins and Lectins
(isolectins, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Proteins, specific or class
(retinol-binding, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Globulins, biological studies
(thyroxine-binding, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

IT Globulins, biological studies
(α-, virus inactivation in, by **sodium**

thiocyanate and ultrafiltration)
IT Globulins, biological studies
Lipoproteins
(β-, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)
IT Globulins, biological studies
(γ-, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)
IT 9013-79-0, Esterase
(serum, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)
IT 9000-94-6, Antithrombin III 9001-24-5, Blood-coagulation factor V
9001-25-6, Blood-coagulation factor VII 9001-26-7, Prothrombin
9001-27-8, Blood-coagulation factor VIII 9001-28-9,
Blood-coagulation factor IX 9001-29-0, Blood coagulation factor X
9013-56-3, Blood-coagulation factor XIII 9031-37-2, Ceruloplasmin
9031-96-3, Peptidase 9035-58-9, Blood-coagulation factor III
105913-11-9, Plasminogen activator
(virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)
IT 9001-90-5, Plasmin
(α2-inhibitor, virus inactivation in, by **sodium thiocyanate** and **ultrafiltration**)

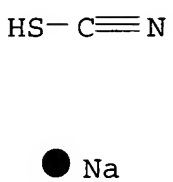
L37 ANSWER 8 OF 11 HCA COPYRIGHT 2006 ACS on STN
102:115349 Formation of cellulose **membranes** for reverse osmosis separation of water-inorganic solute and water-organic solute systems. Farnand, B.; Talbot, F. D. F.; Matsuura, T.; Sourirajan, S. (Dep. Chem. Eng., Univ. Ottawa, Ottawa, ON, K1N 9B4, Can.). Can. Bioenergy R&D Semin., [Proc.], 5th, 189-94. Editor(s): Hasnain, Sadiq. Elsevier Appl. Sci.: London, UK. (English) 1984. CODEN: 53DYA3.
AB Cellulose (I) [9004-34-6] **membranes** produced by using a Me2SO-paraformaldehyde solvent system were useful for reverse osmosis sepn. of inorg. electrolytes involving divalent anions at low solute concns. Comparison of sepn. of different inorg. solutes at feed solute concn. 0.0045 M revealed that Cl- with divalent cations is less sepd. than that with monovalent ones, while Na salts with divalent anions are more sepd. than those with monovalent ones. I **membranes** also exhibited high sepns. for long-chain alcs. due to the repulsive force working between I and alc. solutes. However, the development of **membranes** with smaller av.

pore radii than (15-17) + 10-10 m is necessary to achieve an effective sepn. of EtOH from 10% aq. EtOH soln.

IT **540-72-7P**
(**sepn.** of, in aq. solns., by cellulose **membranes**)

RN 540-72-7 HCA

CN Thiocyanic acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

ST inorg solute sepn cellulose **membrane**; alc sepn cellulose **membrane**; reverse osmosis sepn cellulose **membrane**

IT Alcohols, preparation
Ethers, preparation
Ketones, preparation
Salts, preparation
(sepn. of, in aq. solns., by cellulose **membranes**)

IT Osmosis
(reverse, **membranes**, cellulose, for sepn. of inorg. and org. solutes, from aq. solns.)

IT **Membranes**
(reverse-osmosis, cellulose, for sepn. of inorg. and org. solutes, from aq. solns.)

IT 9004-34-6, uses and miscellaneous
(**membrane**, sepn. by, of inorg. and org. solutes, from aq. solns.)

IT 50-70-4P, preparation 56-81-5P, preparation 57-50-1P, preparation 62-53-3P, preparation 67-63-0P, preparation 71-36-3P, preparation 71-41-0P, preparation 75-65-0P, preparation 78-83-1P, preparation 78-92-2P 98-86-2P, preparation 100-66-3P, preparation 103-73-1P 106-48-9P 108-83-8P 108-95-2P, preparation 111-27-3P, preparation 111-87-5P, preparation **540-72-7P** 563-80-4P 628-81-9P 7447-40-7P, preparation 7487-88-9P, preparation 7631-99-4P, preparation 7632-00-0P 7647-14-5P, preparation 7647-15-6P, preparation 7647-17-8P, preparation 7681-49-4P, preparation

7681-55-2P 7681-82-5P, preparation 7757-82-6P, preparation
7775-09-9P 7786-30-3P, preparation 7789-38-0P 7791-11-9P,
preparation 10043-52-4P, preparation 10361-37-2P, preparation
10476-85-4P 12125-02-9P, preparation
(**sepn.** of, in aq. solns., by cellulose
membranes)

L37 ANSWER 9 OF 11 HCA COPYRIGHT 2006 ACS on STN
92:54575 Radioreceptor assay of TSH. Binding of 125I-TSH to the human
thyroid receptor and the interaction of long-acting thyroid
stimulator-immunoglobulin G. Endo, Keigo (Sch. Med., Kyoto Univ.,
Kyoto, Japan). Nippon Naibunpi Gakkai Zasshi, 55(10), 1249-60
(Japanese) 1979. CODEN: NNGZAZ. ISSN: 0029-0661.
AB Human thyroid gland homogenates were centrifuged (104 + g),
and the ppts. were suspended in 10 mM Tris buffer (pH 7.5), contg.
50 mM NaCl and 0.91% bovine serum albumin, for use as the
membrane TSH receptor (TSHR). 125I-labeled TSH was purified
by incubation with the TSHR suspension at 37° for 30 min.,
elution of the sediments with 2 M **NaSCN**, gel
filtration through a G 100 column using the buffer-NaCl
soln., and collection of the 2nd peak. TSHR showed an assocn.
const. of 1.5 + 108 M-1 for TSH. Interference with the
specific binding by TSHR of TSH was produced by the long-acting
thyroid stimulator (IgG) of serum from patients with Graves' disease
but not by normal IgG, T3, or T4. The adenyl cyclase activity of
TSHR was increased with increased binding of TSH to TSHR.
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 2
IT 9034-48-4
(TSH binding by **membrane** receptor interference by)

L37 ANSWER 10 OF 11 HCA COPYRIGHT 2006 ACS on STN
84:185567 Complex formation of ionophores of the dioxaoctane
dicarboxylic acid diamide type with alkali and alkaline earth
cations. Stability constants in ethanol. Kirsch, Norbert N. L.;
Simon, Wilhelm (Lab. Org. Chem., ETH, Zurich, Switz.). Helvetica
Chimica Acta, 59(2), 357-63 (German) 1976. CODEN: HCACAV. ISSN:
0018-019X.
AB Stability consts. of NH4+, Li+, Na+, K+, Rb+, Mg2+, Cs+, Ca2+, Sr2+,
and Ba2+ complexes with the title noncyclic ligands were detd.
potentiometrically at 30° in EtOH using liq. **membrane**
cation-sensitive electrodes contg. these ligands. Complexes with

[Ph2NCOCH2OCH2]2 were **isolated** for **NaSCN**, KSCN, Ca(NO3)2, Sr(ClO4)2, and Ba(ClO4)2; these complexes were examd. by DTA and ir spectroscopy. Ir spectra were also detd. for Ba2+ and K+ complexes with [EtOCO(CH2)11NMeCOCH2OCHMe]2 in EtOH and EtCN.

CC 68-2 (Phase Equilibriums, Chemical Equilibriums, and Solutions)
Section cross-reference(s): 72

ST liq **membrane** electrode cation sensitive; alkali noncyclic polyether complex; alk earth noncyclic polyether complex; amide oxaoctane alkali complex; polyether alkali alk earth complex

IT Electrodes
(cation-sensitive, using noncyclic polyether liq. **membranes**)

IT **Membranes**
(liq., noncyclic polyether for cation-sensitive electrodes)

IT Alkali metals, compounds
Alkaline earth compounds
(with noncyclic polyethers, cation sensitive liq. **membrane** electrodes in relation to formation of)

IT 16,19-Dioxa-13,22-diazatetratriacontanedioic acid, 13,17,18,22-tetramethyl-14,21-dioxo-, diethyl ester, (R*,R*)-, alkali and alk. earth metal complexes
(formation of, cation-sensitive liq. **membrane** electrodes in relation to)

IT 43133-08-0D, Acetamide, 2,2'-[1,2-ethanediylbis(oxy)]bis[N,N-diphenyl-, alkali and alk. earth metal complexes
(formation of, cation-sensitive liq. **membrane** electrodes in relation to)

IT 43133-08-0 58725-79-4
(liq. **membranes**, for cation-sensitive electrodes)

L37 ANSWER 11 OF 11 HCA COPYRIGHT 2006 ACS on STN

74:135662 Partial resolution of the enzymes catalyzing oxidative phosphorylation. XXIV. Factor required for the binding of mitochondrial adenosine triphosphatase to the inner mitochondrial **membrane.** Knowles, Aileen F.; Guillory, Richard J.; Racker, Efraim (Dep. Biochem. Mol. Biol., Cornell Univ., Ithaca, NY, USA). Journal of Biological Chemistry, 246(8), 2672-9 (English) 1971. CODEN: JBCHA3. ISSN: 0021-9258.

GI For diagram(s), see printed CA Issue.

AB Two sol. proteins isolated from bovine heart mitochondria were required for the conferral of sensitivity of ATPase activity of coupling factor F1 to the energy transfer inhibitor, DCCD

(N,N'-dicyclohexylcarbodimide) (I). These sol. conferral factors were designated Fc1 and Fc2. Prepns. of Fc2 **purified** from **NaSCN** ext. stimulated the 32Pi-ATP exchange reaction and oxidative phosphorylation in silicotungstate-treated submitochondrial particles. Treatment of TUA (trypsin, urea, and alkaline pH prepn.) particles with silicotungstate decreased their ability to bind ATPase (F1). The addn. of Fc2 restored the ability to bind ATPase. It is proposed that Fc2 is a component which links the mitochondrial ATPase to the inner **membrane.**

CC 3 (Enzymes)

ST ATPase mitochondria inner **membrane**; binding factor mitochondrial ATPase

IT Mitochondria
(**membranes**, adenosine triphosphatase binding by inner, protein factors in)

IT 9000-83-3, Phosphatases, adenosine tri-
(mitochondrial inner **membrane** binding of, protein factors in)